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EXAMINER				
FANG, SHANE				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,005

Applicant(s)

MATSUOKA ET AL.

Examiner

SHANE FANG

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Since this application is eligible for the transitional procedure of 37 CFR 1.129(a), and the fee set forth in 37 CFR 1.17(r) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.129(a). Applicant's first submission after final filed on 09/18/09 has been entered.

Response to Amendment

- The ODP rejections on claims 1-2, 9-11, and 15-20 over 11/629,264 has been overcome by amendment.
- The 103 rejections of claims 1-7 and 12 over Wang et al. 433' in view of Wang et al. 382' have been overcome by amendment.
- The 103 rejections of claims 8-11 and 13-20 over Wang et al. 433' in view of Wang et al. 382' and further view of Deckwer et al. have been overcome by amendment.
- The amendment of claims 1 and 4 has been found supported by original claims.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-7 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5-7 and 12 recites the limitation

"glycidyl ether (B2)". There is insufficient antecedent basis for this limitation in the claims 5-7 and 12 in view of amendment of claim 4. For examination purpose, the limitation "glycidyl ether (B2)" is not considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 9-11, 16, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Casey et al. (US 3997512).

As to claims 1 and 3, Casey et al. discloses a biodegradable polyester composition (Abs.) comprising 0.05 part of ethylene glycol dimethacrylate in presence of peroxide crosslinked with 1 part of aliphatic polyester obtained by reacting diglycolic acid and fumaric acid reacted with 1,2-propanediol (Ex. 4, Ex. 11-12). Casey et al. discloses the biodegradable polyester has sufficiently high MW (1:34-45). Casey et al. is silent on gelation index and melt viscosity. However, In view of the substantially identical composition, it appears that the adduct would have inherently possessed the claimed properties. See MPEP § 2112. In this particular case, no chemical, structural, or compositional difference is shown between claimed and disclosed biodegradable polyester composition. The disclosed biodegradable polyester composition would inherently exhibit aforementioned claimed properties.

As to claims 9-11, 16, 18, and 20, Casey et al. discloses biodegradable polyester is used to make molding product such as clamps (9:14-25). One of ordinary skill in the art would at once envisage using biodegradable polyester composition disclosed in Ex. 12 to make molding product such as clamps. Casey et al. is silent on extruding, injection and blow molding. However, claims 9-11, 16, 18, and 20 are product-by-process claims that are limited by and defined by the product. Determination of patentability is based on the product itself, not on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F. 2d 695, 698,277 USPQ 964,966 (Fed. Cir. 1985). See MPEP § 2113.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 15, 17, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Casey et al. (US 3997512) in view of Wang et al. (US 5952433) .

Disclosure of Casey et al. is adequately set forth in ¶13 and is incorporated herein by reference.

As to claim 2, Casey et al. is silent on polyactic acid.

Wang et al. discloses a biodegradable polyester composition comprising modified or unmodified polylactic acid (PLA), 2-hydroxyethyl methacrylate (HEMA), and peroxide (6:20-65, Ex. 1-2). Wang et al. discloses PLA is water stable (3:40-45). Wang et al. discloses modified PLA with polyvinyl alcohol (PVOH) to obtain superior processing and mechanical and physical properties (7:50-59).

Therefore, as to claim 2, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the polyester composition disclosed by Casey et al. and replaced the polyester with PVOH modified PLA in view of Wang et al., because the resultant composition would yield improved water stability and superior processing and mechanical and physical properties. The resultant composition would be inherently crosslinked between PVOH modified PLA with ethylene glycol dimethacrylate through vinyl and hydroxyl groups on methacrylate, PVOH, and PLA. In addition, the instant specification [0027] indicates trimethylolpropane trimethacrylate (with no hydroxyl group on its structure) can be crosslinked with PLA (unmodified with PVOH). In light of this, one of ordinary skill in the art would obviously recognize that ethylene glycol dimethacrylate (also with no hydroxyl group on its structure) would inherently crosslinked with PLA (unmodified with PVOH).

Claims 15, 17, and 19 product by process claims and are rejected based on the rejection of claim 2 and the same rationale as applied to claims 9-11, 16, 18, and 20.

6. Claims 1, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decker et al. (US 5952433 A, listed on previous 892) in view of Casey et al. (US 3997512).

Decker et al. discloses biologically degradable polyesters that can be processed, for example by thermoplastic processes into foamed moulded parts by foaming (4: 35-48).

Decker et al. is silent on the polyester composition of claim 1.

Casey et al. discloses a biodegradable polyester composition with inherent properties of claim 1 and is set forth in above ¶ 3. Casey et al. indicates the disclosed biodegradable polyester composition can be used to make molding product such as clamps (above ¶ 3). Casey et al. discloses the biodegradable polyester composition is resistant to organic solvent such as chloroform (Ex.12).

Therefore, as to claims 1, 8, and 14, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the foamed article disclosed by Decker et al. and replaced the polyester composition with the one disclosed by Casey et al., because the resultant foamed article would be resistant to organic solvent such as chloroform.

7. Claims 1-2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decker et al. (US 5952433 A, listed on previous 892) in view of Casey et al. (US 3997512) and in further view of Wang et al. (US 5952433).

Decker et al. discloses biologically degradable polyesters that can be processed, for example by thermoplastic processes into foamed moulded parts by foaming (4: 35-48).

Decker et al. is silent on the polyester composition of claim 2.

Casey et al. and Wang et al. disclose a biodegradable polyester composition with inherent properties of claims 1-2 as set forth in above ¶ 5. Casey et al. and Wang et al. suggests that the PLA based polyester composition would yield improved water stability and superior processing and mechanical and physical properties (above ¶ 5).

Therefore, as to claims 1-2 and 13, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the foamed article disclosed by Decker et al. and replaced the polyester composition with the one disclosed by Casey et al. and Wang et al., because the resultant foamed article would yield improved water stability and superior processing and mechanical and physical properties.

8. Claims 4-7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 5952433) in view of Casey et al. (US 3997512).

As to claim 4-7 and 12, disclosure of Wang et al. concerning the process is adequately set forth in ¶3 of previous FOAM and is incorporated herein by reference.

Wang et al. is silent on the polyester composition and its inherent properties of claims 4-7 and 12.

Casey et al. discloses a biodegradable polyester composition of aliphatic polyester crosslinked with ethylene glycol dimethacrylate (above ¶3) in presence of

peroxide. Casey et al. indicates the disclosed biodegradable polyester composition can be used to make molding product such as clamps (above ¶ 3). Casey et al. discloses the biodegradable polyester composition is resistant to organic solvent such as chloroform (Ex.12).

Therefore, as to claims 4-7 and 12, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the process disclosed by Wang et al. and replaced the polyester composition in view of Casey et al., because the resultant process would yield a composition resistant to organic solvent such as chloroform.

Claim Rejections - Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-4 and 8-11 and 13-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 and 5-6 of copending Application No. 12/312808. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

As to instant claims 1-4, 12/312808 discloses a biodegradable polyester resin composition and method of producing (melt-kneading) comprising 100 part of polyester such as PLA(claims 1-2). The reference is silent on the properties of instant claims 1 and 3-4, but these property limitations are met based on the rationale of the rejection of instant claim 1 in above ¶ 3.

As to instant claims 8-11 and 13-20, 12/312808 discloses mold and foamed body but silent on the method of producing (claims 5-6), but these product-by-process limitations are met based on the rationale of the rejection of instant claims 9-11, 16, 18, and 20 in above ¶ 3.

11. Claims 1-3 and 8-11 and 13-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-4 and 9-10 of US 7449510. This is a non-provisional obviousness-type double patenting rejection because the conflicting claims have in fact been patented.

As to instant claims 1-3, 510' discloses a biodegradable polyester resin composition comprising 100 part of biodegradable polyester such as PLA and 0.01-10 parts (a range specific sufficiently overlapped with claimed range, 0.01-5 part) of (meth)acrylic groups contains at least two (meth)acrylic groups (claims 1, 3-4). The

reference is silent on the properties of instant claims 1 and 3, but these property limitations are met based on the rationale in above ¶ 10.

As to instant claims 8-11 and 13-20, 510' discloses mold and foamed body obtained by injection, extrusion, blow, and foam molding (claims 9-10).

Response to Arguments

Applicant's arguments, with respect to amendment have been fully considered and persuasive. The previous rejections (including ODP) on claims 1-20 have been withdrawn by amendment.

The amendment that introduces further limitation of (meth)acrylic ester as B1 having two or more (meth)aryl groups in amended claims 1 and 4 as disclosed in the original claims. The amendment is supported. However, the amendment changes the scope of claimed inventions.

Applicant's arguments (Pg. 1-3) with respect to claims 1 and 4 concerning Wang 382' have been considered but are moot in view of the new ground(s) of rejection. Wang 382' fails to disclose (meth)acrylic ester having two or more (meth)aryl groups, disqualifying itself as a prior art by amendment. The deficiency of Wang 433' concerning (meth)acrylic ester having two or more (meth)aryl groups has been addressed in current action and has been alleviated by Casey et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8 a.m. to 6:30 p.m. EST.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sf

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796